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Control and Verification of Industrial Hybrid Systems Using Models Specified with the Formalism χ

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Abstract

Control and verification of hybrid systems is studied using two industrial examples. The hybrid models of a conveyor-belt and of a biochemical plant for the production of ethanol are specified in the formalism χ. A verification of the closed-loop systems for those examples, consisting of an interconnection of the control system and the controller, is made. A control synthesis procedure is presented, with which controllers for hybrid systems can be synthesized.

AMS Subject Classification (1991): 93C83, 93C15, 68N05.
Keywords and Phrases: Hybrid systems, modelling of hybrid systems, verification, control synthesis, formalism χ, industrial applications of hybrid systems.
Note: This note reports on the investigation by the author, a master level student, during his stay at CWI.

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http://www.tue.nl/wtb/wpa/se/fey/fey.html